REMARKS

The Office Action of January 26, 2006, has been received and reviewed. Claims 1, 2, 11-14, and 18-22 are pending in the present application. Claims 11-14 have been withdrawn from consideration. Claims 1, 2, and 18-22 stand rejected. In view of the remarks presented herein, reconsideration is respectfully requested.

Priority document

The Examiner notes that a claim to foreign priority has been made based on EP 01200353.9 but that a certified copy of that application has not yet been filed in the USPTO. The applicant wishes to inform the Examiner that the priority document has been requested and will be filed with the Office when it is received.

Rejections under 35 U.S.C. § 112, 2nd Paragraph

Claims 1, 2, and 18-20 stand rejected under 35 U.S.C. § 112, 2nd paragraph, as assertedly being indefinite for failing to particularly point out and distinctly claim the subject matter with the applicant regards as the invention. The applicant respectfully traverses the rejections as hereinafter set forth.

In regards to claims 1 and 2, it was thought that phrase "methylglyoxal modifying activity" is vague and indefinite. *Office Action* mailed January 26, 2006, as page 2. Applicant notes that the term "MG" is used through the specification, the prior art, and this response as short hand for "methylglyoxyl." Applicant respectfully submits that the phrase "methylglyoxal modifying activity" should not be considered separately from the entire phrase of "protein methylglyoxal modifiying activity" as the term "protein" more clearly describes the nature of the activity in the phrase "methylglyoxal modifying activity"

In light thereof, the applicant respectfully submits that the phrase "protein methylglyoxal modifiying activity" is not indefinite. Specifically, the phrase "protein methylglyoxal modifying activity" is defined in the specification at paragraph 10, wherein it states "the term 'MG-modification of proteins' is considered as being equivalent with the term AGE formation." Paragraph 10 of the specification further defines AGEs in noting that "the term 'AGE,' as used here, is used for any MG-modification of a protein, irrespective of the way it is formed." As

such, applicant respectfully submits that "protein methylglyoxal modifying activity" or MG-modifying activity is well defined in the specification as having an activity to provide an MG modification of a protein or the formation of AGEs.

In addition, applicant respectfully submits that the phrase "protein methylglyoxal modifying activity" has specific meaning to one of skill in the art in the context in which it is used. Specifically claims 1 and 2 recite "an isolated phosphorylated polypeptide having protein methylglyoxal modifying activity..." Applicant respectfully submits that one of skill in the art would interpret this phrase as clearly indicating an isolated phosphorylated polypeptide having the ability to add a methylglyoxal derived modification to a protein. As such, the phrase "protein methylglyoxal modifying activity" would have specific meaning to one of skill in the art when presented in its entire context.

Further, applicant respectfully submits that the phrase "protein methylglyoxal modifying activity" has a specific meaning in the art. For example, Oya et al., in the first four paragraphs following the abstract, describe MG and AGEs as well as using the phrase "MG modification of protein." J. Biol. Chem., 274, 18492-18502, 1999. In a further example, Sakamoto et al., in the first four paragraphs following the abstract, describe MG and AGEs as well as MG-modified proteins and the post-translational modification of proteins with MG. J. Biol. Chem., 277, 45770-45775, 2002. As such, the applicant respectfully submits that MG-modified proteins are well known in the art and, as such, the phrase "protein methylglyoxal modifying activity" is not vague or indefinite to one of skill in the art.

Additionally, the Examiner asserts that:

> The specification teaches a glyoxlase I enzyme from human of SEQ ID NO: 1 which catalyzes the isomerization of hemithioacetal, produced by the nonenzymatic conjugation of methylglyoxal with glutathione, to S-D-lactoylglutathione. It is not clear if the recited polypeptide has any other or additional enzyme activities as encompassed by the phrase "methylglyoxal modifying activity."

Applicant respectfully submits that the Examiner has misunderstood the nature of the invention. As outlined in Example 9 of the specification, the isolated phosphorylated polypeptide having protein methylglyoxal modifying activity of the present invention has the enzymatic activity of catalyzing a the formation of a protein with a methylgyloxal derived

modification. Thus, it is clear from the specification and the claims that the claimed isolated phosphorylated polypeptide having protein methylglyoxal modifying activity has an additional enzymatic activity other than the isomerization of hemithioacetal and that this additional enzymatic activity is encompassed by the phrase "protein methylglyoxal modifying activity."

In light of the foregoing, the applicant respectfully requests withdrawal of the rejections of claims 1 and 2 and the claims dependent therefrom under 35 U.S.C. § 112, 2nd paragraph and reconsideration of the same.

In regards to claims 12-14, the applicant notes that these process claims are currently withdrawn. However, the applicant reserves the right to amend these withdrawn process claims upon allowance of a product claim in order to facilitate rejoinder.

Rejections under 35 U.S.C. § 103

Claims 1, 18, 19, 21, and 22 stand rejected under 35 U.S.C. § 103(a) as assertedly being obvious over Ranganathan et al. (J. Bio. Chem. 1993 Mar 15; 268(8):5661-7) in view of Pestka et al. (Prot. Expr. Purif. 1999 Nov; 17(2):203-14). Applicant respectfully traverses the rejection for the reasons hereinafter set forth.

As noted by the Examiner, Ranganathan et al. teaches a human glyoxlase I ("GLOI") having several potential phosphorylation sites. *Office Action* mailed January 26, 2006, at page 4. The Examiner further asserts that Pestka et al. teach various methods of phosphorylating proteins and that such phosphorylated proteins may be usefully in a variety of applications such as pharmacokinetics, localization, and diagnostic imaging. *Id.* at page 5.

Applicant respectfully submits that the combination of Ranganathan et al. and Pestka et al. cannot make obvious claims 1, 18, 19, 21, and 22 as their combination is only, at most, "obvious to try." Applicants respectfully submit that "obvious to try" is not the standard for obviousness under 35 U.S.C. § 103(a). *See, e.g.*, MPEP § 2145(X)(B). The Federal Circuit, in the case of *In re O'Farrell*, noted that it is "obvious to try" to explore a general approach in a promising field of experimentation where the prior art gives only general guidance as to the particular form of the claimed invention or how to achieve it. 853 F.2d 894, 903 (Fed. Cir. 1988). Such is the case here.

Applicant respectfully submits that the use of the teachings of Pestka et al. to modify the

sequence of GLOI disclosed in Ranganathan et al., is nothing more than a suggestion to use the general approach of phosphorylation in what seems to be a promising field of experimentation. While the Examiner notes that phosphorylation, as described in Pestka et al., may be useful in a variety of applications such as pharmacokinetics, localization, and diagnostic imaging, there is nothing in the references to suggest that such applications would be useful as applied to GLOI. As such, the applicant respectfully submits that phosphorylation studies as described by Pestka et al. are just a general approach in a promising field of experimentation. Given that the Federal Circuit has indicated that such approaches amount to, at most, "obvious to try," applicant submits that the combination of Ranganathan et al. and Pestka et al., cannot make obvious claims 1, 18, 19, 21, and 22 as required by 35 U.S.C. § 103(a).

In addition, the applicant respectfully submits that the combination of Ranganathan et al. and Pestka et al. is improper as there would be no motivation to combine the references. To establish a *prima facie* case of obviousness there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. M.P.E.P. § 2143. The applicant submits that no motivation exists to combine Ranganathan et al. and Pestka et al. as suggested by the Examiner since no indication in the art exists that a phosphorylated GLOI would be enzymatically active. Moreover, no indication exists that GLOI would acquire a novel protein methylglyoxal modifying activity upon phosphorylation. Although the existence of an enzymatic protein methylglyoxal modifying activity has been accepted by a person of skill in the art, the enzyme responsible for this modification has never been identified until the present application. *See, e.g.*, Sakamoto et al. at page 45773, right column, lines 9-11. As such, one of skill in the art would not be motivated to combine Ranganathan et al. and Pestka et al. to achieve the "isolated phosphorylated polypeptide having methylglyoxal modifying activity" of claim 1. As such, the applicant requests the withdrawal of the rejections of claim 1 and the claims dependent therefrom under 35 U.S.C. § 103(a) and reconsideration of the same.

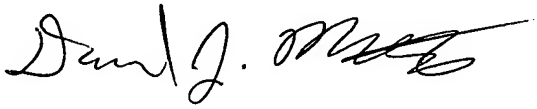
Furthermore, the "isolated phosphorylated polypeptide having methylglyoxal modifying activity" of claim 1 should not be considered obvious as the phosphorylation of GLOI to yield such an activity is unexpected. Presence of a property not possessed by the prior art is evidence of nonobviousness. *See e.g., In re Papesch*, 315 F.2d 381 (CCPA 1963); M.P.E.P. §

716.02(a)(III). As noted *supra*, the existence of an enzymatic protein methylglyoxal modifying activity has been accepted by a person of skill in the art, but the enzyme responsible for this modification was not identified prior to the present application. *See, e.g.*, Sakamoto et al. at page 45773, right column, lines 9-11. As such, the phosphorylation of GLOI to yield the "isolated phosphorylated polypeptide having methylglyoxal modifying activity" of claim 1 is an unexpected result as a person of skill in the art was unaware which enzyme is responsible for methyglyoxal modifications and as there is no indication or suggestion in the prior art that a phosphorylated GLOI was likely to have an enzymatic protein methylglyoxal modifying activity. Consequently, the applicant respectfully requests the withdrawal of the rejections of claim 1 and the claims dependent therefrom under 35 U.S.C. § 103(a) and reconsideration of the same.

CONCLUSION

Claims 1, 2, and 18-22 are believed to be in condition for allowance and notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact the Applicant's undersigned attorney.

Respectfully submitted,



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